

Listing of Claims

What is claimed is:

Claims 1-4 (Cancelled)

Claim 5 (Original) Hybrid maize seed which is produced by crossing two parental maize lines where at least one of said parental maize lines is a transgenic maize line which has in its genome a recombinant DNA construct comprising at least one oil-associated gene operably linked to a promoter which is functional in said plant to transcribe said oil-associated gene.

Claims 6-9 (Cancelled)

Claim 10 (Original) A method of breeding maize comprising selecting from a breeding population of maize plants a selected maize plant with higher oil than other maize plants in said breeding population based on allelic polymorphisms associated by linkage disequilibrium to a higher seed oil-related trait, wherein the selected maize plant has 1 or more higher oil alleles linked to a maize oil marker.

Claim 11 (Cancelled)

Claim 12 (Original) A method of breeding maize according to claim 10 wherein said selected maize plant has 2 or more higher oil alleles linked to a maize oil marker.

Claim 13 (Original) A method of breeding maize according to claim 10 wherein said selected maize plant has 3 or more higher oil alleles linked to a maize oil marker.

Claims 14-20 (Cancelled)

Claim 21 (Currently amended) A method of associating a seed oil-related trait to a genotype in maize comprising

- (a) identifying a set of one or more seed oil level traits characterizing said maize plants,
- (b) selecting tissue from at least two maize plants having allelic DNA and assaying DNA or mRNA from said tissue to identify the presence or absence of a set of distinct polymorphisms comprising at least one polymorphism linked to a ~~locus of claim 16~~ polymorphic maize DNA locus which comprises at least 20 consecutive nucleotides which include or are adjacent to a maize oil marker, and
- (c) identifying associations between said set of polymorphisms and said set of traits.